

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A pneumatic plate element comprising:
at least one hollow body made from a flexible material that is gas-tight and capable of sustaining loads from a pressure media under operating pressure;
at least two compression/tension elements surrounding the at least one hollow body, wherein each end of each compression/tension element of the at least two compression/tension elements is connected ~~non-positively~~ with an end of another compression/tension element of the at least two compression/tension elements;
wherein the at least one hollow body is located between the at least two compression/tension elements;
wherein at least two of the at least two compression/tension elements are connected to each other via at least one pure tensile element;
wherein the at least one pure tensile element is connected to each of the at least two compression/tensions elements at a point corresponding to respective ends of the at least two compression/tension elements; and
wherein, responsive to application of a load to the pneumatic plate element under operating pressure, a first compression/tension element of the at least two compression/tension elements is axially compressed and a second compression/tension element of the at least two compression/tension elements is axially tensioned.

2. (Currently Amended) The pneumatic plate element of claim 1, wherein a prestressing force in the at least one pure tensile element is greater than a stabilising force required to prevent buckling of the at least two compression/tension elements.

3. (Previously Presented) The pneumatic plate element of claim 2, wherein under operating pressure a first compression/tension element of the at least two compression/tension element elements is constructed as purely a compression element and a second compression/tension element of the at least two compression/tension elements is constructed as purely a tensile element under an operating load.

4. (Previously Presented) The pneumatic plate element of claim 1 wherein the at least one pure tension element passes through the at least one hollow body.

5. (Previously Presented) The pneumatic plate element of claim 1 wherein the at least one pure tensile element passes around an outside region of the at least one hollow body.

6. (Currently Amended) The pneumatic plate element of claim 1 wherein the at least one pure tensile element passes through the at least one hollow body without ~~non-positive~~ connection between a membrane and the at least one pure tensile element in a direction of the at least one pure tensile element.

7. (Previously Presented) The pneumatic plate element of claim 6, wherein:
the at least one pure tensile element is guided through an eyelet incorporated in the membrane;
the eyelet is sealed in a gas-tight manner via a seal arranged to be flush with the at least one pure tensile element; and
the eyelet and the seal are axially displaceable on the at least one pure tensile element.

8. (Previously Presented) The pneumatic plate element of claim 1 wherein the at least one pure tensile element is disposed within a plurality of gas-tight channels in the at least one hollow body.

9. (Previously Presented) The pneumatic plate element of claim 8, wherein the plurality of gas-tight channels comprise:
two endpieces connected to each other by a tube that penetrates the at least one hollow body through a plurality of apertures in a membrane, and
wherein the two endpieces can be attached to the membrane by at least one of clamping, bonding or welding.

10. (Previously Presented) The pneumatic plate element of claim 9, wherein the tube comprises a hose secured in a gas-tight manner to the two endpieces.

11. (Previously Presented) The pneumatic plate element of claim 1, comprising at least two hollow bodies arranged substantially parallel in a direction of the at least two compression/tension elements.

12. (Previously Presented) The pneumatic plate element of claim 1, comprising at least two hollow bodies arranged substantially parallel to each other transverse to a direction of the at least two compression/tension elements.

13. (Currently Amended) The pneumatic plate element of claim 1, wherein:
the pneumatic plate element is separable into at least two parts in a direction of the at least two compression/tension elements, and
partial sections of the at least two compression/tension elements are connected to each other in a detachable, flexurally rigid ~~and non-positive~~ manner via a plurality of connectors.

14. (Currently Amended) The pneumatic plate element of claim 1, comprising at least two pairs of compression/tension elements that are arranged parallel to each another and are connected to each other at respective ~~respective~~ ends.

15. (Previously Presented) The pneumatic plate element of claim 1, comprising a plurality of plate-shaped compression/tension elements, the plurality of plate-shaped compression/tension elements comprising cross sections which vary over a length of the plurality of plate-shaped compression/tension elements.

16. (Previously Presented) The pneumatic plate element of claim 1, comprising a plurality of cross-members extending essentially transversely between the at least two compression/tension elements.

17. (Previously Presented) The pneumatic plate element of claim 1, wherein at least one of the at least two compression/tension elements is constructed as a panel with a plurality of cutouts.

18. (Previously Presented) The pneumatic plate element of claim 1, wherein the at least two compression/tension elements connected at to each other at the respective ends are arranged to form a polygon.

19. (Previously Presented) The pneumatic plate element of claim 1, wherein at least one horizontal intermediate membrane is drawn inside the at least one hollow body, the at least one horizontal intermediate membrane is operable to increase an insulating property of the at least one hollow body and reduce a vertical transport of heat by convection.

20. (Currently Amended) The pneumatic plate element of claim 1, wherein the at least two compression/tension elements are constructed as a plurality of two-dimensional, polygonal compression/tension lattices, such compression/tension lattices comprising a plurality of element sections joined ~~in non-positive manner~~ by a plurality of connections.

21. (Previously Presented) The pneumatic plate element of claim 20, wherein at least two of the plurality of compression/tension lattices are connected via the at least one pure tensile element at least at all of the connections.

22. (Previously Presented) The pneumatic plate element of claim 20, wherein the plurality of two-dimensional, polygonal element sections and the connections are integrated in a membrane of the at least one hollow body.

23. (Previously Presented) The pneumatic plate element of claim 22, wherein the plurality of element sections are made from a plurality of fibre-reinforced, flexible plastic strips.

24. (Previously Presented) The pneumatic plate element of claim 22, wherein the pneumatic plate element is constructed to allow folding or rolling in one piece together with a membrane of the at least one hollow body and the plurality of element sections.

25. (Previously Presented) The pneumatic plate element of claim 20, wherein the plurality of element sections that are subjected to tensile stresses are constructed as purely tensile elements.

26. (Previously Presented) The pneumatic plate element of claim 1, wherein the at least one hollow body is divided by a plurality of gas-tight partition walls into a plurality of chambers that are pressurized independently of one another.

27. (Previously Presented) The pneumatic plate element of claim 20, wherein the plurality of two-dimensional, polygonal compression/tension lattices are constructed from a plurality of element sections of differing shapes and strengths.

28. (Previously Presented) The pneumatic plate element of claim 1, wherein a plurality of pneumatic plate elements are joined to form essentially two-dimensional or three-dimensional structures.

29. (Previously Presented) The pneumatic plate element of claim 1, wherein a plurality of pneumatic plate elements are utilized in combination to form larger, connected two-dimensional structures.

30. (Previously Presented) The pneumatic plate element of claim 1, wherein the pneumatic plate element is utilized as a roof.

31. (Previously Presented) The pneumatic plate element of claim 1, wherein the pneumatic plate element is utilized as a bridge.

32. (Previously Presented) The pneumatic plate element of claim 1, wherein the pneumatic plate element is utilized as a floating rigid container.

33. (Previously Presented) The pneumatic plate element of claim 1, wherein the at least one hollow body is filled with a liquid and used as a floating, rigid container for transport or storage.

34. (Previously Presented) The pneumatic plate element of claim 1, wherein the at least one hollow body is loaded with a gas that is lighter than air and used as a floating or semi-floating roof.

35. (Previously Presented) The pneumatic plate element of claim 1, wherein the at least one pure tensile element is pre-stressed via the at least one hollow body under pressure loading.

36. (Previously Presented) The pneumatic plate element of claim 1, comprising a plurality of wind braces extending essentially diagonally between the at least two compression/tension elements.